

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

Claims 1-64 (Cancelled).

65. (New) A surgical tool system comprising:

1) a plurality of surgical handpieces, each handpiece including:

a) a power generating unit to which an energization signal is applied;

b) memory containing data defining the characteristics of the energization signal required by the power generating unit of a specific handpiece,

c) wherein power generating units of dissimilar handpieces require, respectively, energization signals of different characteristics; and

2) a control console, the control console including:

a) a plurality of sockets, wherein each handpiece is removably connected to a separate one of the sockets;

b) a power supply connected through the sockets to the handpiece power generating units for supplying the energization signals to the handpiece power generating units; and

c) a processor in communication with the sockets for retrieving the data from the handpiece memories and to subsequently regulate the supply of energization signals by the power supply to each handpiece power generating unit based on the data from the memory of the handpiece with which the handpiece power generating unit is integral.

66. (New) The surgical tool system of Claim 65, wherein each handpiece further includes a member connected to the power generating unit that applies the power generated by the power generating unit to a surgical site.

67. (New) The surgical tool system of Claim 65, wherein the power supply is configured to, at a given instant, supply energization signals to the power generating units of less than all of the surgical handpieces connected to the control console.

68. (New) The surgical tool system of Claim 67, wherein the control console, in response to a user-entered command, selectively supplies energization signals from the power supply to one or more of the handpiece power generating units.

69. (New) The surgical tool system of Claim 67, wherein:

each handpiece includes a control switch for regulating actuation of the power generating unit integral with the handpiece; and

the control console is connected to the handpiece control switches to monitor actuation of the control switches and, based on actuation of the control switches, selectively supplies energization signals from the power supply to one or more of the handpiece power generating units.

70. (New) The surgical tool system of Claim 65, wherein the power supply is configured to, at a given instant, supply energization signals to a single one of the handpiece power generating units.

71. (New) The surgical tool system of Claim 65, wherein the handpiece power generating units are motors and the handpiece motors operate at different speeds or consume different amounts of power.

72. (New) The surgical tool system of Claim 65, wherein:

integral with each handpiece is a sensor that generates a sensor signal, wherein the sensor signals from the plurality of handpiece sensors have different characteristics;

each handpiece memory containing data defining the characteristics of the sensor signal generated by the sensor integral with the handpiece; and

the processor retrieves from the handpiece memories the sensor signal characteristic-defining data and reads from the handpiece sensors the sensor signals and further regulates the supply of energization signals from the power supply to each handpiece power generating unit based on the sensor signal from the associated handpiece sensor and the characteristic-defining data for the sensor signal.

73. (New) The surgical tool system of Claim 65, wherein each handpiece is removably connected to a separate one of the control console sockets by a flexible cable.

74. (New) The surgical tool system of Claim 65, wherein each handpiece includes a housing in which the power generating unit is located.

75. (New) The surgical tool system of Claim 74, wherein the handpiece memory is contained within the handpiece housing.

76. (New) The surgical tool system of Claim 65, wherein the control console is further configured to:

retrieve and store the data in the handpiece memories of the handpieces connected to the sockets upon actuation of the system;

after actuation of the system, determine if a new handpiece is connected to one of the sockets and, if a new

handpiece is connected to one of the sockets, retrieve the data in the handpiece memory of the new handpiece; and

after retrieving the data from the handpiece memories, regulate the power supply based on the stored data from the handpiece memories.

77. (New) A control console for actuating plural surgical handpieces, each surgical handpiece having a power generating unit that is actuated by an energization signal applied to the power generating unit and memory containing data that defines the characteristics of the energization signal, the control console comprising:

a plurality of sockets to which separate surgical handpieces are simultaneously connected;

a power supply for supplying energization signals to the surgical handpiece power generating units through the sockets;

a control processor that connects to the sockets and retrieves, through the sockets, data in the handpiece memories, the control processor also connecting to the power supply for regulating the supply of energization signals so that the power supply supplies to each handpiece power generating unit an energization signal based on the retrieved data from the handpiece memory associated with the handpiece power generating unit.

78. (New) The control console of Claim 77, wherein the power supply is configured to, at a given instant, supply energization signals to the power generating units of less than all of the surgical handpieces connected to the control console.

79. (New) The control console of Claim 78, wherein the control console, in response to a user-entered command, selectively supplies the energization signals from the power supply to one or more of the handpiece power generating units.

80. (New) The control console of Claim 78, wherein:
each handpiece includes a control switch for regulating
actuation of the power generating unit integral with the
handpiece; and

the control console connects to and monitors the
handpiece control switches and, based on actuation of the
control switches, selectively supplies energization signals
from the power supply to one or more of the handpiece power
generating units.

81. (New) The control console of Claim 77, wherein the
power supply is configured to, at a given instant, supply
energization signals to a single one of the handpiece power
generating units.

82. (New) The control console of Claim 77, wherein the
control console is configured, on the basis of data in the
handpiece memories, to supply different energization signals
from the power supply to each of the handpiece power
generating units.

83. (New) The control console of Claim 77, wherein:
integral with each handpiece is a sensor that generates a
sensor signal having one or more unique characteristics;
each handpiece memory contains data defining the
characteristics of the sensor signal generated by the sensor
integral with the handpiece; and

the processor retrieves from the handpiece memories the
sensor signal characteristic-defining data and reads from the
handpiece sensors the sensor signals and further regulates the
supply of energization signals from the power supply to each
handpiece power generating unit based on the sensor signal
from the associated handpiece sensor and the characteristic-
defining data for the sensor signal.

84. (New) The control console of Claim 77, wherein the processor is further configured to:

retrieve and store the data in the handpiece memories of the handpieces connected to the sockets upon actuation of the control console;

after actuation of the control console, determine if a new handpiece is connected to one of the sockets and, if a new handpiece is connected to one of the sockets, to retrieve the data in the handpiece memory of the new handpiece; and

after retrieving the data from the handpiece memories, regulating the power supply based on the stored data from the handpiece memories.

85. (New) A control console for actuating plural surgical handpieces, each handpiece having a motor that is actuated by an energization signal and memory with data defining the characteristics of the energization signal, wherein the energization signals applied to the handpiece motors are different from each other, the control console comprising:

a plurality of sockets, with each socket configured to releasably receive a separate one of the handpieces so that the plural handpieces are simultaneously connected to the control console;

a power supply for supplying power through the sockets to the handpiece motors; and

a control processor that connects to the sockets and retrieves, through the sockets, data in the handpiece memories and, based on the data from the handpiece memories, causes the power supply to supply the energization signals to the handpiece motors.

86. (New) The control console of Claim 85, wherein the power supply is configured to, at a given time, supply energization signals to the motors of less than all of the

plurality of surgical handpieces connected to the control console.

87. (New) The control console of Claim 85, wherein the power supply is configured to, at a given time, supply energization signals to only a single one of the motors of the handpieces connected to the control console.

88. (New) The control console of Claim 85, wherein: each handpiece motor is able to draw a select maximum current at a given speed, and each handpiece memory contains data defining the speed-current relationship for the associated handpiece motor, with the speed-current relationships of the handpiece motors differing from each other;

a tachometer is provided for monitoring the speeds of the handpiece motors;

a current monitoring circuit is provided for monitoring the current drawn by the handpiece motors; and

the processor is connected to the tachometer to receive the speed of each handpiece motor, and is connected to the current monitoring circuit to determine the current drawn by each motor, the processor further being configured to, based on the data in each of the handpiece memories, for each motor, determine the maximum current the motor should draw based on the speed of the motor and, when the motor is actuated, compare the current drawn by the motor to the maximum allowed current for the speed of the motor, and when the comparison indicates the motor is drawing more than the maximum allowed current, to cause the power supply to stop supplying energization signals to the motor.

89. (New) The control console of Claim 85, wherein: each handpiece includes a sensor that generates a sensor signal, wherein the characteristics of the sensor signals

generated by the plurality of handpiece sensors are different from each other;

each handpiece memory containing data defining the characteristics of the associated handpiece sensor signal; and

the processor retrieves from the handpiece memories the sensor signal characteristic-defining data and reads from the handpiece sensors the sensor signals and for each handpiece motor, further controls the power supply so that the power supply supplies power to each handpiece motor based on the associated handpiece sensor signal and the characteristic-defining data of the handpiece sensor signal.

90. (New) The control console of Claim 85, wherein:

each handpiece motor operates within a selected speed range, the speed ranges of the handpiece motors being different from each other, and each handpiece memory contains data defining the speed range of the associated handpiece motor;

a tachometer is provided for monitoring the speed of the handpiece motors; and

the control console is further configured to retrieve from the handpiece memories the data defining the speed ranges of the associated handpiece motors, and monitors the speed of the handpiece motors through the tachometer and further controls the power supply so that energization signals provided by the power supply to the handpiece motors cause each handpiece motor to operate within the selected speed range for the handpiece motor.

91. (New) The control console of Claim 85, wherein:

each handpiece memory contains header data that identifies the handpiece, and encyclopedia data that defines the characteristics of the energization signal applied to the handpiece motor; and

the control console is configured to:

retrieve the header data and encyclopedia data from the handpiece memories of the handpieces connected to the control console upon actuation of the control console;

store the retrieved header data and encyclopedia data;

periodically retrieve the header data from the handpiece memories of the handpieces connected to the control console and compare the newly retrieved header data to the stored header data;

if the comparison indicates a change in the header data, store the newly retrieved header data and retrieve and store the associated encyclopedia data; and

regulate operation of the power supply based on the stored encyclopedia data.

92. (New) A control console for actuating a plurality of surgical handpieces, each handpiece having a power generating unit, a sensor that generates a sensor signal used to regulate the actuation of the power generating unit, and memory containing data defining the characteristics of the associated handpiece sensor signal, wherein the sensor signals from the plurality of handpiece sensors are different from each other, the control console including:

a plurality of sockets, each socket configured to releasably receive one of the surgical handpieces so that the plurality of surgical handpieces are simultaneously connected to the control console;

a power supply for supplying energization signals to the handpiece power generating units through the sockets; and

a control processor connected to and retrieving through the sockets the handpiece sensor signals and the data in the handpiece memories, and connected to the power supply in order to regulate the power supply such that, for each handpiece power generating unit, the power supply supplies an energization signal based on the associated handpiece sensor signal and the characteristic-defining data of the handpiece sensor signal.

93. (New) The control console of Claim 92, wherein the power supply is configured to, at a given time, supply energization signals to the power generating units of less than all of the plurality of surgical handpieces connected to the control console.

94. (New) The control console of Claim 92, wherein the power supply is configured to, at a given time, supply energization signals to the power generating unit of a single one of the handpieces connected to the control console.

95. (New) The control console of Claim 92, wherein the control console, based on the handpiece sensor signal and the characteristic-defining data for the handpiece sensor signal for each handpiece, produces a corrected sensor signal and controls the generation of the energization signal for the handpiece power generating unit based on the corrected sensor signal.

96. (New) The control console of Claim 92, wherein:
each handpiece memory contains header data that identifies the handpiece and encyclopedia data that describes the characteristics of the sensor signal from the handpiece sensor; and

the control console is configured to:
retrieve and store, upon actuation of the control console, the header data and encyclopedia data for the handpiece memories of the handpieces connected to the control console;

periodically retrieve the header data from the handpiece memories of the handpieces connected to the control console and compare the newly retrieved header data to the stored header data;

if the comparison indicates a change in the header data, store the newly retrieved header data and retrieve and store the associated encyclopedia data; and

regulate the operation of the power supply based on the stored encyclopedia data from the handpiece memories.